UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
LIOU, ERIC

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 December 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-14</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-14</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 12/6/07 has been entered.

Response to Arguments

1.   Applicant's arguments with respect to claims 1, 6, 13, and 14 have been considered but

are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

3.   Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

4.   Claim 1 recites the limitation "…determining a stochastic distribution of uncertain factors

included in an expected balance generated from said electric power generating plan and said

electric power trading plan based on an autoregressive moving average model, and presenting

said stochastic distribution of uncertain factors in a time-series form." It is unclear how one can

perform the determining step when the electric power generating plan and electric power trading

plan are not positively recited in the body of the claim.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 1-7, 9-11, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Takriti, U.S. Patent No. 6,021,402 in view of Iino, U.S. Patent No. 5,873,251 and further in

view of Zhang, "Linear and Nonlinear Modeling and Forecasting of Electric Power Loads",

Oklahoma State University, July 1992.

7.   **As per claim 1**, Takriti '402 discloses in a planning system that makes plans of electric

power generation and electric power trade, a computer implemented method for an electric

power generating plan and an electrical power trading plan comprising the steps of: determining

a stochastic distribution of uncertain factors included in an expected balance generated from said

electric power generating plan and said electric power trading plan (Takriti '402: col. 4, lines 58-

67 - col. 5, lines 1-19), and presenting said stochastic distribution of uncertain factors in a time-

series form (Takriti '402: Figures 9A, 9B, and 11),

8.   Takriti '402 does not disclose <u>wherein said uncertain factors include prediction errors</u>

<u>caused by annulment of said electrical power trading plan; and determining a stochastic</u>

<u>distribution based on an autoregressive moving average model.</u>

9.   Iino discloses wherein said uncertain factors include prediction errors caused by

annulment of said electrical power trading plan (Iino: col. 14, lines 31-41 – Iino discloses in-

trouble surplus energy calculating means 48 that calculates the surplus energy conditions which

can satisfy conditions that the total electricity generation quantity is larger than the electricity

generation demand, which suggests a prediction error. Furthermore, the phrase "machine

troubles" suggest that the power company may be inoperable, which implies that the power

company may not be able to fulfill the energy demand recited in an energy-trading plan. If this

is the case, it is possible that the energy-trading plan is annulled.).

10.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to have modified the method of Takriti '402 to have included wherein said uncertain

factors include prediction errors caused by annulment of said electrical power trading plan as

disclosed by Iino for the advantage of providing a system and method that will increase the

efficiency of electric power production so as to contribute to the protection of the environment

(Iino: col. 1, lines 40-42).

11.   Takriti '402 in view of Iino does not disclose determining a stochastic distribution based

on an autoregressive moving average model.

12.   Zhang discloses using stochastic time series approaches in the form of autoregressive

moving average models to forecast power loads (pgs. 3, 11-12, and 21).

13.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to have modified the method of Takriti '402 in view of Iino to have included

determining a stochastic distribution based on an autoregressive moving average model as

disclosed by Zhang for the advantage of providing a systematic procedure that can produce good

forecasting results and allow for modeling situations that include multiperiodicity and

nonstationarity (Zhang: pg. 121).

14.   **As per claim 2**, Takriti '402 further discloses the said electric power generating plan and

said electric power trading plan are presented in time-series forms (Takriti '402: Figures 9A, 9B,

and 11).

15.   **As per claim 3**, Takriti '402 further discloses the uncertainty factors include variances of

electric power demand (Takriti '402: Figure 11).

16.   **As per claim 4**, Takriti '402 further discloses the said uncertainty factors include

variances of unit price of fuel to be used for power generators (Takriti '402: Figure 2, "112";

Figure 3, see fuel price per MMBTU).

17.   **As per claim 5**, Takriti '402 further discloses said uncertainty factors include variances

of unit price of electric power to be traded (Takriti '402: Figure 3, see price per MWH for

forecasted trades).

18.   **As per claim 6**, Takriti '402 discloses in a planning system that makes plans of electric

power generation and electric power trade, a computer implemented method for an electric

power generating plan and an electrical power trading plan comprising the steps of: determining

a stochastic distribution of uncertain factors included in an expected balance generated from said

electric power generating plan and said electric power trading plan (Takriti '402: col. 4, lines 58-

67 - col. 5, lines 1-19), and presenting said stochastic distribution of uncertain factors in a time-

series form (Takriti '402: Figures 9A, 9B, and 11) and a chart that gives a time axis for an axis

and expected values and variances of said stochastic distribution for another axis (Takriti '402:

Figures 9A, 9B, and 11 - Figure 9 discloses load forecasts (expected values). Figure 11 discloses

different scenarios, which indicate variances of values as shown on the y-axis. It would have

been obvious for one skilled in the art at the time of the invention to have combined the

information of Figures 9 and 11 into one chart for the advantage of conveniently organizing data

into one graph.).

19.   Takriti '402 does not disclose <u>wherein said electric power generating plan and the electric</u>

<u>power trading plan and said stochastic distribution are presented in a first chart that gives a time</u>

<u>axis for an axis, and generator power output and contracted electric power for the other axis, the</u>

<u>first chart including an interruption term of power supply regarding to maintenance inspection</u>

<u>and a term of output restriction; and determining a stochastic distribution based on an</u>

<u>autoregressive moving average model</u>.

20.   Iino discloses wherein said electric power generating plan and the electric power trading

plan and said stochastic distribution are presented in a first chart that gives a time axis for an

axis, and generator power output and contracted electric power for the other axis (Iino: Figure 7F

- The Examiner interprets E_{gen} and E_{load} to be generator power output and contracted electric

power respectively.) and a chart including an interruption term of power supply regarding to

maintenance inspection and a term of output restriction (Iino: Figure 6B, "Plant Shutdown"). It

would have been obvious to one of ordinary skill in the art at the time of the invention to have

combined the data of Figures 6B and 7F in one chart for the advantage of conveniently

organizing data into one graph.).

21.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to have modified the method of Takriti '402 to have included <u>wherein said electric</u>

<u>power generating plan and the electric power trading plan and said stochastic distribution are</u>

presented in a first chart that gives a time axis for an axis, and generator power output and
contracted electric power for the other axis, the first chart including an interruption term of
power supply regarding to maintenance inspection and a term of output restriction as disclosed
by Iino for the advantage of conveniently representing the power generating plan data and
electric power trading plan data in a chart form.

22.   Takriti '402 in view of Iino does not disclose determining a stochastic distribution based
on an autoregressive moving average model.

23.   Zhang discloses using stochastic time series approaches in the form of autoregressive
moving average models to forecast power loads (pgs. 3, 11-12, and 21).

24.   It would have been obvious to one of ordinary skill in the art at the time the invention
was made to have modified the method of Takriti '402 in view of Iino to have included
determining a stochastic distribution based on an autoregressive moving average model as
disclosed by Zhang for the advantage of providing a systematic procedure that can produce good
forecasting results and allow for modeling situations that include multiperiodicity and
nonstationarity (Zhang: pg. 121).

25.   **As per claim 7**, Takriti '402 does not disclose receiving designation of an area of blocks
where power generator output is presented in said first chart thereof, and presenting power
generation volume, and power generator start stop term, in date output pattern and information of
price variation of said fuel to be used.

26.   Iino further discloses the steps of: receiving designation of an area of blocks where power
generator output is presented in said first chart thereof (Iino: Figures 7F and 7H), and presenting
power generation volume, and power generator start stop term, in date output pattern and

information of price variation of said fuel to be used (Iino: Figure 6B, see plant shutdown;

Figures 7F and 7H; Figure 12D, see fuel unit price).

27.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to have modified the method of Takriti '402 in view of Iino and further in view of

Zhang to have included <u>receiving designation of an area of blocks where power generator output</u>

<u>is presented in said first chart thereof, and presenting power generation volume, and power</u>

<u>generator start stop term, in date output pattern and information of price variation of said fuel to</u>

<u>be used</u> as disclosed by Iino for the advantage of providing a system and method that will

increase the efficiency of electric power production so as to contribute to the protection of the

environment (Iino: col.1, lines 40-42).

28.   **As per claim 9**, Takriti '402 further discloses receiving designation of an area of blocks

where in-trade electric power is presented in said first chart thereof (Takriti '402: Figure 3, "see

Forecasted Trades for October 15, 1996"; Figure 11), and presenting trade unit price, trade

volume and in-date supply pattern (Takriti '402: Figure 3, "see Forecasted Trades for October

15, 1996").

29.   **As per claim 10**, Takriti '402 further discloses receiving designation of an area of blocks

where in-trade electric power is presented thereof (Takriti '402: Figures 9A and 9B), and

presenting expected values and variances of both unit price and volume of electric power to be

traded for a term that said designation appoints (Takriti '402: Figure 3, "see Forecasted Trades

for October 15, 1996", see the varying prices per MWH).

30.   **As per claim 11**, Takriti '402 further discloses receiving a term to be specified in said

time axis, receiving a selection of an expanded scale or an shrunk scale of date or time zone of

said term to be presented, and presenting a chart composed on a time axis defined in said

expanded scale or said shrunk scale (Takriti '402: Figures 9A, 9B, and 11 – The Examiner notes,

it is basic knowledge of one skilled in the art to shrink or expand the scale of a chart axis

accordingly. The applied reference has been interpreted and applied assuming basic

knowledge of one of ordinary skill in the art. According to *in re Jacoby,* 135 USPQ 317

(CCPA 1962), the skilled artisan is presumed to know something more about the art than only

what is disclosed in the applied references. In *In re Bode,* 193 USPQ 12 (CCPA 1977), every

reference relies to some extent on knowledge of persons skilled in the art to complement that,

which is disclosed therein.).

31.   **As per claims 13 and 14**, Takriti '402 discloses a planning method and computer

readable recording medium that has a function for planning computer equipment that makes

electric power generating plan and electric power trading plan comprising the steps of:

determining a stochastic distribution due to uncertain factors regarding to a balance caused by

electric power generation and electric power trade (Takriti '402: col. 4, lines 50-67 – col. 5, lines

1-19), and presenting said stochastic distribution in a time-series form (Takriti '402: Figures 9A,

9B, and 11).

32.   Takriti '402 does not disclose wherein said uncertain factors are prediction errors caused

by annulment of the electrical power trading plan; and determining a stochastic distribution

based on an autoregressive moving average model.

33.   Iino discloses wherein said uncertain factors are prediction errors caused by annulment of

the electrical power trading plan (Iino: col. 14, lines 31-41 – Iino discloses in-trouble surplus

energy calculating means 48 that calculates the surplus energy conditions which can satisfy

conditions that the total electricity generation quantity is larger than the electricity generation

demand, which suggests a prediction error. Furthermore, the phrase "machine troubles" suggest

that the power company may be inoperable, which implies that the power company may not be

able to fulfill the energy demand recited in an energy-trading plan. If this is the case, it is

possible that the energy-trading plan is annulled.).

34.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to have modified the method and computer readable recording medium of Takriti '402

to have included wherein said uncertain factors are prediction errors caused by annulment of the

electrical power trading plan as disclosed by Iino for the advantage of providing a system and

method that will increase the efficiency of electric power production so as to contribute to the

protection of the environment (Iino: column 1, lines 40-42).

35.   Takriti '402 in view of Iino does not disclose determining a stochastic distribution based

on an autoregressive moving average model.

36.   Zhang discloses using stochastic time series approaches in the form of autoregressive

moving average models to forecast power loads (pgs. 3, 11-12, and 21).

37.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to have modified the method and computer readable recording medium of Takriti '402

in view of Iino to have included determining a stochastic distribution based on an autoregressive

moving average model as disclosed by Zhang for the advantage of providing a systematic

procedure that can produce good forecasting results and allow for modeling situations that

include multiperiodicity and nonstationarity (Zhang: pg. 121).

38.   Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takriti,

U.S. Patent No. 6,021,402 in view of Iino, U.S. Patent No. 5,873,251 in view of Zhang, "Linear

and Nonlinear Modeling and Forecasting of Electric Power Loads", Oklahoma State University,

July 1992 and further in view of Takriti et al., U.S. Patent No. 5,974,403.

39.   **As per claim 8**, Takriti '402 does not disclose receiving a designation of an area of

blocks where an interruption term of power supply regarding to a maintenance inspection term

and a restriction term of generator output is presented in said first step thereof, and presenting

said interruption term of power supply regarding to maintenance inspection, said restriction term

of generator output or a generator output to be suppressed.

40.   Iino discloses receiving a designation of an area of blocks for an interruption term of

power supply (Iino: Figure 6B, see plant shutdown) and a restriction term of generator output is

presented in said first step thereof (Iino: Figure 6B; col. 10, lines 33-37), and presenting said

interruption term of power supply, said restriction term of generator output or a generator output

to be suppressed (Iino: Figure 6B; col. 10, lines 33-37).

41.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to have modified the method of Takriti '402 in view of Iino and further in view of

Zhang to have included receiving a designation of an area of blocks for an interruption term of

power supply and a restriction term of generator output is presented in said first step thereof, and

presenting said interruption term of power supply, said restriction term of generator output or a

generator output to be suppressed as disclosed by Iino for the advantage of providing a system

and method that will increase the efficiency of electric power production so as to contribute to

the protection of the environment (Iino: col. 1, lines 40-42).

42.   Takriti '402 in view of Iino and further in view of Zhang does not disclose the
interruption term of power supply results from maintenance inspection.

43.   Takriti '403 discloses the interruption term of power supply results from maintenance
inspection (Takriti '403: col. 5, lines 15-21).

44.   It would have been obvious to one of ordinary skill in the art at the time the invention
was made to have modified the method of Takriti '402 in view of Iino and further in view of
Zhang to have included the interruption term of power supply results from maintenance
inspection as disclosed by Takriti '403 for the advantage of providing a tool for forecasting the
spot price of electric power and the amount of power that may be traded in a market (Takriti
'403: column 3, lines 25-28).

45.   **As per claim 12**, Takriti '402 further discloses determining a new said stochastic
distribution, and presenting the said new stochastic distribution in a time-series form (Takriti
'402: Figures 9A, 9B, and 11).

46.   Takriti '402 does not disclose receiving said generator output, a term to be specified in
said time axis, said interruption term of power supply regarding to maintenance inspection, said
term of output restriction.

47.   Iino discloses receiving said generator output (Iino: Figures 7F and 7H), a term to be
specified in said time axis (Iino: Figures 7F and 7H – The Examiner notes, hours are specified in
the time axis.), said interruption term of power supply (Iino: Figures 6B, see plant shutdown),
said term of output restriction (Iino: Figures 6B, see plant shutdown).

48.   It would have been obvious to one of ordinary skill in the art at the time the invention
was made to have modified the method of Takriti '402 in view of Iino and further in view of

Zhang to have included <u>receiving said generator output, a term to be specified in said time axis,</u>

<u>said interruption term of power supply, said term of output restriction</u> as disclosed by Iino for the

advantage of providing a system and method that will increase the efficiency of electric power

production so as to contribute to the protection of the environment (Iino: col. 1, lines 40-42).

49.   Takriti '402 in view of Iino and further in view of Zhang does not disclose <u>the</u>

<u>interruption term of power supply regarding maintenance inspection</u>.

50.   Takriti '403 discloses the interruption term of power supply regarding maintenance

inspection (Takriti '403: col. 5, lines 15-21).

51.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to have modified the method of Takriti '402 in view of Iino and further in view of

Zhang to have included <u>the interruption term of power supply regarding maintenance inspection</u>

as disclosed by Takriti '403 for the advantage of providing a tool for forecasting the spot price of

electric power and the amount of power that may be traded in a market (Takriti '403: column 3,

lines 25-28).

Conclusion

52.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

      a.   Ibrahim, U.S. Publication No. 2004/0102937, drawn to energy forecasting using

      autoregressive moving average models.

b.   Fan et al., "A Real-Time Implementation of Short-Term Load Forecasting For

Distribution Power Systems", IEEE Transactions on Power Systems, Vol. 9, No. 2, May

1994, pgs. 988-994.

c.   Papalexopoulos et al., "A Regression-Based Approach to Short-Term System

Load Forecasting", IEEE Transactions on Power Systems, Vol. 5, No. 4, November

1990, pgs. 1535-1550.

The Examiner has cited particular portions of the references as applied to the claims

above for the convenience of the Applicant. Although the specified citations are representative

of the teachings in the art and are applied to the specific limitations within the individual claim,

other passages and figures may apply as well. It is respectfully requested that the Applicant, in

preparing the responses, fully consider the references in entirety as potentially teaching all or

part of the claimed invention, as well as the context of the passage as taught by the prior art or

disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Eric Liou whose telephone number is (571)270-1359. The

examiner can normally be reached on Monday - Friday, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Hayes can be reached on 571-272-6708. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Liou/
Examiner, Art Unit 3628

/JOHN W HAYES/

Supervisory Patent Examiner, Art Unit 3628